

Claims:

1. Serum-stable amphoteric liposomal formulations with at least one active substance in the aqueous interior, characterized in that the liposomes comprise
 - neutral lipids with a membrane proportion of 10 to 60 mole-%,
 - cholesterol with a proportion of 30 to 50 mole-%,and, as charged lipids, either
 - amphoteric lipids with a proportion of 5 to 30 mole-%,
 - or
 - mixtures of cationic and anionic lipids with an overall proportion of 50 mole-% at maximum,and that the active substance comprises at least one oligonucleotide.
2. The liposomal formulation according to claim 1, characterized in that the proportion of cholesterol is 35 to 45 mole-%, the proportion of amphoteric lipids is 5 to 20 mole-% and/or the proportion of said mixtures is 15 to 45 mole-%.
3. The liposomal formulation according to claim 1 or 2, characterized in that the oligonucleotides are constituted of 5-100, preferably 5-40 and more preferably 10-25 deoxyribonucleotides, ribonucleotides or chemically modified derivatives thereof.
4. The liposomal formulation according to any of claims 1 to 3, characterized in that the oligonucleotides are present as single strand, double strand, or in complex folding.
5. The liposomal formulation according to claim 4, characterized in that the single strands are present as antisense oligonucleotides, the double

strands as small interfering RNA and/or decoy oligonucleotides and/or the complex foldings as aptamers and/or spiegelmers.

6. The liposomal formulation according to any of claims 1 to 5, characterized in that the oligonucleotide is an aptamer.
7. The liposomal formulation according to any of claims 1 to 6, characterized in that the oligonucleotide is a spiegelmer.
8. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/MoChol/DMPS/Chol 40:10:10:40.
9. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/AC/Chol 50:10:40.
10. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/HisChol/DPPS/Chol 35:10:15:40.
11. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/IsohistsuccDG/Chol 50:10:40.
12. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/MoChol/DGSucc/Chol 35:10:15:40.
13. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/MoChol/DGSucc/Chol 40:10:10:40.

14. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/MoChol/DGSucc/Chol 35:10:15:40.
15. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/HistSuccDG/Chol 50:10:40.
16. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/MoChol/DPPS/Chol 40:10:10:40.
17. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/DOTAP/DGSucc/Chol 20:10:30:40.
18. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/HistChol/Chol 50:10:40.
19. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/HistSuccDG/Chol 40:20:40.
20. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/MoChol/DG-Succ/Chol 20:10:30:40.
21. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/HcChol/Chol 50:15:35.

22. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/HcChol/Chol 50:15:35.
23. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/HistPS/Chol 50:15:35.
24. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/HistPS/Chol 50:15:35.
25. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/AC/Chol 50:15:35.
26. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/AC/Chol 50:15:35.
27. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/HistChol/Chol 50:15:35.
28. The liposomal formulation according to any of claims 1 to 5, characterized in that the liposomal membrane has the molar composition POPC/HistChol/Chol 50:15:35.
29. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/MoChol/DG-Succ/Chol 20:10:30:40.

30. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/HistSuccDG/Chol 50:15:35.
31. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/IsoHistSuccDG/Chol 50:15:35.
32. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DPPC/HistSuccDG/Chol 50:15:35.
33. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/IsoHistSuccDG/Chol 50:15:35.
34. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/MoChol/DG-Succ/Chol 20:10:30:40.
35. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/MoChol/CHEMS/Chol 40:10:10:40.
36. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/HistChol/Chol 50:10:40.
37. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/DOTAP/CHEMS/Chol 30:10:20:40.

38. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/HisChol/DGSucc/Chol 40:10:10:40.
39. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/HisChol/CHEMS/Chol 40:10:10:40.
40. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition DMPC/MoChol/CHEMS/Chol 40:10:10:40.
41. The liposomal formulation according to any of claims 1 to 7, characterized in that the liposomal membrane has the molar composition POPC/MoChol/DGSucc/Chol 30:20:10:40.
42. Use of a liposomal formulation according to any of the preceding claims in the production of a drug for the therapeutic treatment of a mammal.
43. The use of a liposomal formulation according to the preceding claim, characterized in that the mammal is a human.
44. The use of a liposomal formulation according to claim 42 or 43 for parenteral application, preferably intravenous application.
45. The liposomal formulation according to any of claims 1 to 41, characterized in that it includes one or more active substances.